SPECIAL CREATION, EVOLUTION, AND THE DIGNITY OF MAN

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It was in 1859, in a quiet preface to what was to be an explosive book, that Charles Darwin described as " erroneous " " the view which most naturalists until recently entertained, and which I formerly entertained —namely, that each species had been independently created."[1] The explosive quality of *The Origin of Species* derived not from this rejection in itself, for in making it many other scientific thinkers had preceded him; as Darwin himself wrote, Lamarck before him had upheld " the doctrine that all species, including man, are descended from other species,"[2] while Lamarck in turn owed much to Buffon. The unprecedented influence of Darwin's book stemmed, then, not from his evolutionary thesis itself but from his brilliant marshalling of evidence in support of the theory that this descent of species from species had been largely, though not exclusively, accomplished through the workings of a principle which Darwin termed " Natural Selection." However, even Darwin's masterly presentation failed to win a complete victory in scouring the field of all opponents, and so it is no surprise that earlier, more tentative expositions of a theory of a natural law of development had failed of success.

The theory of evolution was opposed in all its phases on both scientific and philosophic grounds. However much the scientific bases of the attacks on the developmental theory and the corresponding defenses of the idea of the special creation of species might vary, however, there

[1] Charles Darwin, *The Origin of Species by Means of Natural Selection*, in *Great Books of the Western World*, Vol. 49 (Chicago, 1952), " Introduction," p. 7.

[2] Darwin, "An Historical Sketch," *The Origin of Species*, p. 2.

always underlay the philosophic dispute á tendency to cling to the idea of special creation as a means, perhaps the only means, of securing for man a position of uniqueness and dignity in the world. In discussing three nineteenth-century British participants in this continuing controversy—Robert Chambers, Hugh Miller, and Sir Charles Lyell—, this paper proposes, after examining their rival theories to account for the multiplicity of species and their order of appearance, to trace the ways in which these theories, as well as the writers' acceptance or rejection of the developmental theory as a whole, were inevitably bound up with their efforts to place man in relation to his universe and to his God.

Robert Chambers, in writing his *Vestiges of the Natural History of Creation* in 1844, made what he termed a first attempt to " connect the natural sciences into a history of creation."[1] It was his major contention that " the whole train of animated beings, from the simplest and oldest up to the highest and most recent, are . . . to be regarded as a series of *advances of the principle of development*, which have depended upon external physical circumstances, to which the resulting animals are appropriate "[2] and that, further, the first step in this development was " an advance under favor of peculiar conditions, from the simplest forms of being, to the next more complicated, and this through the medium of the ordinary process of generation."[3] Chambers fully realized that in advancing these ideas, which were not, of course, original with him, he was running the risk of conflict with prevalent religious beliefs—indeed, this risk had been influential in leading him to publish this volume anonymously—, and it was in vain that he insisted that his " sincere desire in the composition of the book was to give the true view of the history of nature, with as little disturbance as possible to existing beliefs, whether philosophical or religious."[4]

For Chambers the intervention of God was not necessary for the de-

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[1] Robert Chambers, *Vestiges of the Natural History of Creation* (New York, 1857), p. 199.

[2] *Ibid.*, p. 105.

[3] *Ibid.*, p. 106.

[4] *Ibid.*, p. 199.

velopment of new species. He had submitted as partial evidence for the thesis of development the relatively-recent discovery that "each animal passes, in the course of its germinal history, through a series of changes resembling the *permanent forms* of the various orders inferior to it in the scale."[1] With this as his basis, Chambers went on to propound his own theory that the progressive development of animal forms had been accomplished through a protraction of "the *straight-forward part of the gestation* over a small space," that, for instance, a fish embryo, having passed through the forms of life lower than it, might continue to develop into a still higher form.[2] He saw at least negative grounds for such a belief in the cases in which an embryo diverged from the normal path of development at a lower point than usual—in those cases, for instance, when the human heart has failed to progress beyond the three-chambered form of the reptile.[3] It was thus, suggested Chambers, that "the simplest and most primitive type, under a law to which that of like-production is subordinate, gave birth to the type next above it, that this again produced the next higher, and so on to the very highest, the stage of advance being in all cases very small—namely, from one species only to another; so that the phenomenon has always been of a simple and modest character."[4]

Chambers' observation of the resemblances between different animal species led him to deny the absolute uniqueness of man. While, for instance, insisting on the "great general superiority of the human mind over that of the inferior animals," he could write that this difference "is a difference in degree only; it is not a specific difference."[5] Similarly, after his observation of nature he could not believe in the thoroughly moral or benevolent working of the universe. Indeed, he concluded that, for instance, "moral conditions have not the least concern in the workings of . . . simply physical laws";[6] although he believed that

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[1] *Ibid.*, pp. 102–103.
[2] *Ibid.*, pp. 109–110.
[3] *Ibid.*, p. 113.
[4] *Ibid.*, p. 115.
[5] *Ibid.*, pp. 172–173.
[6] *Ibid.*, p. 193.

" benevolence is a leading principle in the Divine Mind," he judged the system of nature " deficient in a means of making this benevolence of invariable operation."[1]

In presenting his ideas, Chambers realized the nature of the opposition which would be raised against him on philosophic or theological grounds and attempted to meet such anticipated criticism. In response to those who believed that God had peopled the world in a series of separate creations and that it would detract from the glory of God to see natural history as " a series of advances of the principle of development," Chambers retorted that it was " the narrowest of all views of the Deity, and characteristic of an humble class of intellects, to suppose him acting constantly in particular ways for particular occasions."[2] It would, he foresaw, be thought " degrading " that " any one of the lower animals have been concerned in any way with the origin of man." However, he insisted that his ideas in no way detracted from the dignity of man; using the analogy of the conception and birth of the individual, which " a healthy and natural mind finds no difficulty in regarding . . . complacently," Chambers contended that it was possible to take the same attitude toward the development of species. " Creative Prividence has been pleased to order that it should be so, and it must therefore be submitted to . . . The very faintest notion of there being anything ridiculous or degrading in the theory—how absurd does it appear, when we remember that every individual amongst us actually passes through the character of the insect, the fish, and reptile (to speak nothing of others,) before he is permitted to breathe the breath of life." Chambers went further and took the initiative against his critics. Such objections, he wrote, betrayed " a contempt for the works and ways of God " and also " an element of unkindness toward the lower animals "; these notions were " mere emanations of false pride and ignorant prejudice."[3]

Although, as Darwin wrote, Chambers' work displayed " in its earlier editions little accurate knowledge and a great want of scientific caution,"

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[1] *Ibid.*, p. 198.

[2] *Ibid.*, p. 81.

[3] *Ibid.*, pp. 120–121.

it nevertheless did " excellent service . . . in calling attention to the subject, in removing prejudice, and in thus preparing the ground for the reception of analogous views."[1] Even in thus preparing the way for Darwin, however, Chambers was far from being entirely successful. At times his sowing of ideas must have appeared to him like the sowing of dragons' teeth, for all about him hostile voices were raised.

It was Hugh Miller, the uneducated stone-mason who had risen through intervals as accountant and editor to a position of some reputation as a geologist, who, as much as anyone, took up the cudgels against the theory of development found in the works of Chambers and others. In 1847 Miller first published his widely-influential *Footprints of the Creator*, a book hailed by Louis Agassiz in an 1850 preface as a " successful combination of Christian doctrines with pure scientific truths."[2] The book reflects in its title the author's concern with what he conceived to be religious truths, while reflecting in its subtitle—*The Asterolepis of Stromness*—Miller's reliance for evidence largely on research he had himself conducted into the geological formations and habitation of the Orkney Islands. Although he was most of all interested in supporting the cardinal points of Christian doctine and in opposing a doctrine which he deemed unable to account for the soul in man, Miller yet realized that " the battle of the Evidences will have as certainly to be fought on the field of physical science, as it was contested in the last age on that of the metaphysics."[3]

Accordingly, seeing in the theories of Chambers a threat to the sovereign, holy position of man, Miller carefully attempted to prove, on the basis of evidence, the unscientific nature of not only Chambers' work but of the entire developmental thesis. He founded his opposition on two grounds. First, he maintained that, although the developmental thesis would have to be supported by the discovery of a steady progression of fossil forms, from the more simple to the more complex, as one

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[1] Darwin, p. 3.

[2] Hugh Miller, *Footprints of the Creator*, or *The Asterolepis of Stromness* (Edinburgh, 1890), p. iii.

[3] *Ibid* , p. 17.

worked upward in any multi-level geological deposit, Miller himself had found that, for instance, " the oldest organism yet discovered in the most ancient geological system of Scotland in which vertebrate remains occur " was the Asterolepis of Stromness, a fishlike animal of a complexity and size he considered to be utterly inconsistent with the developmental hypothesis.[1] Miller's second argument was based on his research on the vegetation of the Lake of Stennis, on Orkney, a lake containing both fresh and salt water but in which, despite seemingly ideal conditions, Miller found " no . . . intermediate vegetation . . . Many thousands of years have failed to originate a single intermediate plant."[2]

In writing his book Miller did nothing to conceal his scorn for the theories he opposed. For instance, he denied that superposition was parental relation in a dialogue in which " a philosopher of the school of Maillet and Lamarck " is bested by a farmer—" a plain, observant, elderly man "—in a dispute regarding the significance of the evidence revealed when the farmer digs a six or eight-foot ditch and uncovers the body of an Italian boy's monkey above some vegetable deposits and below the body of a shipwrecked sailor.[3] The scientist in Miller asserted that " the fact that any one thing is found lying on the top of any other thing furnishes no presumption whatever that the thing below stands in the relation of parents to the thing above "; the Christian pamphleteer in Miller had the farmer go on to insist that he believed, as he thought he had to believe, " for it is not contrary to experience, and much according to testimony,—that the Author of all created both land-productions and sea-productions at the ' times before appointed,' and ' determined the bounds of their habitation.' "[4]

Miller's research also led him to believe that with the passage of time the animal world produced more and more of what he termed " monsters "—" monsters through defect of parts," " monsters through re-

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[1] *Ibid.*, p. 20.

[2] *Ibid.*, pp. 232–233.

[3] *Ibid.*, pp. 201–202.

[4] *Ibid.*, pp. 205–206.

dundancy," and monsters " through displacement of parts—,"[1] and that, speaking of fish in particular but also of animal genera in general, " the progress of the race, as a whole, though it still retains not a few of the higher forms, has been a progress, not of development from the low to the high, but of degradation from the high to the low."[2] Thus, although he agreed that " the lower divisions of the vertebrate preceded the higher;—the fish preceded the reptile, the reptile preceded the bird, the bird preceded the mammiferous quadruped, and the mammiferous quadruped preceded man," Miller yet asked, " Is there one of these great divisions in which, in at least some prominent feature, the present, through this mysterious element of degradation, is not inferior to the past? "[3] It was in Miller's mind, of course, to relate such degradation of the race to the degradation of Man following the fall of Adam and Eve, but he did not use this material to form a rival theory of " hereditary degradation " with which to oppose " the hypothesis of gradual development." He wished only to demonstrate that such evidence seemed to him to make untenable the latter hypothesis.

Having demolished as scientifically unsound and dismissed as heretical, to his own satisfaction and to the satisfaction of numberless admirers, the theory expressed by Professor Lorenz Oken in the words, " Man has not been created, but developed,"[4] to account for the appearance on the earth of different animal species at different times Miller proceeded to set forth his own ideas. These ideas are of special interest because they reflect the close relationship he postulates between God and Man, His creation and the object of His special concern. Believing in a series of creations by God, Miller wrote that " that definite period at which man was introduced upon the scene seems to have been specially determined by the conditions of correspondence which the phenomena of his habitation had at length come to assume with the predestined constitution of

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[1] *Ibid.*, p. 156.

[2] *Ibid.*, p. 160.

[3] *Ibid.*, p. 175.

[4] Lorenz Oken, *Elements of Physiophilosophy*, trans. Alfred Tulk (London, 1847), p. 192.

his mind."[1] In the geological period before the appearance of man the earth had been convulsed by the violence of volcanos, earthquakes, tidal waves and similar natural disasters. Since " it is indubitably the nature of man to base the conclusions which regulate all his actions on fixed phenomena," he would have been forced to become " a wretched, timid, superstitious creature, greatly more hopeless and abject than even the inferior animals " during such a frightful geological period.[2] Therefore, God so arranged it that " the reasoning brain was not produced until the scene had undergone a slow but thorough process of change, during which, at each progressive stage, it had furnished a platform for higher and still higher life. . . . When man's house was fully prepared for him,—when the data on which it is his nature to reason and calculate had become fixed and certain,—the reasoning, calculating brain was moulded by the creative finger, and man became a living soul."[3] As a further proof of his belief in the unique nature of man, Miller maintained that creation had ceased " with the introduction of man into the scene of existence "; this cessation, after a series of acts of creation, had come about because " God's moral government had begun " and so " mere *acts of creation* could no longer carry on the elevatory process."[4] " Man's moral and intellectual faculties will receive their full development," Miller believed, in the dynasty of the future, in, that is, the Redemption which, he conceived, may well be the work of God's Sabbath day.[5]

Untenable as these arguments appear today, they possess an undeniable attractiveness in their conception of man as a creation under the express, loving protection of God. It was an extension of this conception for Miller to insist on the uniqueness of man—that not only had he been created, at an appropriate time, by a special act of God, but also that the moral and intellectual faculties peculiar to man alone were to be the means by which the elevatory process was to be continued. For

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[1] Miller, p. 273.
[2] *Ibid.*, pp. 273–274.
[3] *Ibid.*, p. 277.
[4] *Ibid.*, pp. 293–294.
[5] *Ibid.*, pp. 295–297.

all his uniqueness and dignity, however, Miller's man was far from being the measure of the universe, for Miller's was clearly a God-centered universe. " Man, though he has been increasing in knowledge ever since his appearance on earth, has not been improving in faculty ";[1] the co-operation of God was, therefore, the indispensable ingredient needed for the success of the elevatory process through moral endeavor. Miller was thus led to believe that, " by inculcating," for instance, " that the elevatory process is one of natural law, not of moral endeavor," the new scientific theories were not only misreading the evidence of geology but, more important, also threatening to pervert and lead astray individuals, and so deprive them of eternal life, by depriving them of the belief in God which was for him the basis of the continued moral elevation of mankind.[2]

Hugh Miller died in 1856, so the possible effect on him of the subsequently revealed research and thinking of Charles Darwin and Alfred Russel Wallace can only be surmised. However, the Miller camp remained unreconstructed long after the publication of *The Origin of Species;* as late as 1890, for instance, editions of the Miller book included a preface written by his widow, Lydia Falconer Miller, shortly after her husband's death. In this preface Mrs. Miller rejected the Darwinian theory on the grounds of insufficient evidence and " the want of implicit faith " on the part of Darwin; she found in *The Origin of Species* " a heresy against Christianity and the immortality of the soul."[3]

Nevertheless, the course of scientific thought after Hugh Miller tended to refute him as it confirmed Darwin. The writings of the great geologist Sir Charles Lyell therefore assume special importance because in them can be glimpsed something of the changes in thinking wrought by the advances in science in general and by the advent of Darwinism in particular.

In the years 1830–1833, over a decade before Robert Chambers' *Vestiges of the Natural History of Creation* appeared, Sir Charles published

[1] *Ibid.*, p. 297.
[2] *Ibid.*, p. 300.
[3] *Ibid.*, p. lv.

the three volumes of his first version of the *Principles of Geology*, a fascinating study which demonstrated with verve and clarity its central point that the great natural forces now operating in the world have always been operating and have alone accounted for the world as it now exists; " we may dispense with great and sudden revolutions in the geological order of events . . . a regular and uninterrupted series of changes in the animate and inanimate world may give rise to such breaks in the sequence, and such unconformability of stratified rocks, as are usually thought to imply convulsions and catastrophes."[1] Lyell, however, saw no such pure continuity of natural forces in the development of living things. On the contrary, he maintained that " the popular theory of the successive development of the animal and vegetable world, from the simplest to the most perfect forms, rests on a very insecure foundation,"[2] a judgment he based, in part at least, on the discovery of highly-developed fossil forms in very old strata. Lyell did admit that " we have every reason to infer that the human race is extremely modern," but he refused to see in this late advent of man any continuation of " a supposed progressive system, in which the organic world has advanced slowly from a more simple to a more complex and perfect state."[3]

Lyell not only rejected the theory of development—he even ridiculed the Lamarckian statement of it. After he recounted in detail Lamarck's idea of " the last grand step in the progressive scheme, by which the orang-outang, having been already evolved out of a monad, is made slowly to attain the attributes and dignity of man," he solemnly insisted that his " sketch of the Lamarckian theory " was " no exaggerated picture, and those passages which have probably excited the greatest surprise in the mind of the reader are literal translations from the original."[4] Positively, after ascertaining the reality of species in nature, Sir Charles went on to assert his belief that " each was endowed, at the

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[1] Sir Charles Lyell, *Principles of Geology*, or *The Modern Changes of the Earth and Its Inhabitants* (New York, 1855), pp. 180–181.

[2] *Ibid.*, p. 147.

[3] *Ibid.*, p. 148.

[4] *Ibid.*, pp. 575–577.

time of its creation, with the attributes and organization by which it is now distinguished,"[1] thus indicating clearly, if indirectly, that he had rejected Lamarck's " progressive scheme " in favor of belief in a series of creative acts on the part of the Creator, the latest of which creative acts created man.

In accordance with this, Lyell conceived of man as very much the object of special concern on the part of the Creator; he believed, for instance, that such attributes as " the habits and dispositions which the shepherd's dog and many other inherit . . . were given with no other view than for the use of man and the preservation of the dog, which thus obtains protection."[2]

God's creation of man, moreover, involved a difference in quality as well as a difference in kind. Lyell wrote, ". . . the superiority of man depends not on those faculties and attributes which he shares in common with the inferior animals, but on his reason, by which he is distinguished from them. When it is said that the human race is of far higher dignity than were any pre-existing beings on the earth, it is the intellectual and moral attributes of our race, rather than the physical, which are considered; and it is by no means clear that the organization of man is such as would confer a decided pre-eminence upon him, if, in place of his reasoning power, he was merely provided with such instincts as are possessed by the lower animals."[3] Indeed, Sir Charles minimized not only the physical power of individual men but also the physical power of men in the aggregate. Judging man's effect on the earth's surface, for instance, he felt that man could best be described as only " a levelling agent "; on the whole, " the aggregate force exerted by man is truly insignificant, when we consider the operations of the great physical agents, whether aqueous or igneous, of the inanimate world."[4] The

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[1] *Ibid.*, p. 611.

[2] *Ibid.*, p. 594.

[3] *Ibid.*, p. 148.

[4] Sir Charles Lyell, *Principles of Geology, Being an Inquiry How Far the Former Changes of the Earth's Surface Are Referable to Causes Now in Operation*, 2 vols. (Philadelphia, 1837), pp. 110–111 (not in 1853 edition).

modifications introduced with man have been, then, of a moral, not of a physical nature, and therein, believed Lyell, lay the uniqueness and greatness of man.

Although his *Principles of Geology* rejected the Lamarckian hypothesis of transmutation and clung to the idea of special creation, Lyell was nevertheless regarded by Thomas Henry Huxley as having been " the chief agent for smoothing the road for Darwin. For consistent uniformitarianism postulates evolution as much in the organic as in the inorganic world."[1] Indeed, in 1868 Lyell himself claimed to have, even in his early work, " prepared the way in this country . . . for the reception of Darwin's gradual and insensible evolution of species " and to have " advocated a law of continuity even in the organic world, so far as possible without adopting Lamarck's theory of transmutation."[2] Too, for the tenth edition of *The Principles of Geology,* published in 1867 and 1868, Lyell rewrote certain passages in order to incorporate the theories advanced by Darwin and Wallace.

However, the Darwinian influence on Lyell can perhaps best be seen in *The Antiquity of Man*, published in 1863. This volume, which, as its title indicates, concerned itself specifically with the sources and development of man, reflects the evolutionary theory to such a great extent that it is clear that, try as he might to raise minor objections and to qualify any positive statement, Lyell had by 1863 largely accepted the ideas of Darwin.

In writing *The Antiquity of Man,* Lyell, after noting the objections made to his former doctrines, retracted his belief "that species were primordial creations and not derivative" and that "the creative power, which originally adapts certain types to aquative and others to terrestial conditions, has at successive geological epochs introduced new forms best suited to each area and climate, so as to fill the places of those which may have died out." Indeed, he wrote that " what we term ' independ-

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[1] *The Life and Letters of Charles Darwin,* ed. Francis Darwin, 2 vols. (New York, 1887), I, 543.

[2] *Life, Letters and Journals of Sir Charles Lyell, Bart.*, ed. Mrs. [Katharine Murray Horner] Lyell, 2 vols. (London, 1881), II, 436–437.

ent creation,' or the direct intervention of the Supreme Cause, must simply be considered as an avowal that we deem the question to lie beyond the domain of science." Acknowledging that "no rival hypothesis has been proposed as a substitute for the doctrine of transmutation,"[1] Sir Charles defended this doctrine against the two major objections made against it—that gradational links between species are wanting, and that, given the state of geological knowledge in 1863, these gaps were more numerous than they should be expected to be. To these objections Lyell replied that the number of variations within species is much greater than commonly supposed, that the recognition of such gaps often depends merely on one's system of classifying these variants, and that, in 1863, man possessed relatively little knowledge about the animal and vegetable forms which had preceded him in time. Sir Charles then presented the theories of evolution and natural selection in some detail, first by devoting eleven pages to a description of the development of the languages of men and by suggesting that the ways in which languages develop, spread and change are similar to the ways in which, according to Darwin, living things developed, spread and changed.

Any acceptance such as this of the Darwinian hypothesis necessarily involved a belief in the close relationship of man and the lower animals, especially, of course, the apes. Henry Hallam had commented, "If Man was made in the image of God, he was also made in the image of an ape. The framework of the body of him who weighed the stars and made the lightning his slave, approaches to that of a speechless brute, who wanders in the forests of Sumatra. Thus standing on the frontier land between animal and angelic natures, what wonder that he should partake of both!"[2] Lyell quoted this statement of Hallam's and demonstrated his own clear conception of the duality of man. He faced squarely the resemblances between man and the apes, presenting the evidence according to which the foot of man and of the gorilla are found to resemble each other more than they differ and also noting that the

[1] Sir Charles Lyell, *The Geological Evidence of the Antiquity of Man* (London, 1914), pp. 328–329.

[2] Quoted *ibid.*, p. 390.

brains of men and apes share characteristics no other animals possess. In considering the cranial capacities of men and apes, Lyell refused to recognize the difference in size between the two as a significant difference; he did, however, insist on " how far we are as yet from understanding the real nature of the dependence of intellectual superiority on cerebral structure."[1] Then, having established the close physical resemblances and relationships between man and the lower animals, Sir Charles could go so far as to suspect " the existence in every animal of an immaterial principle, similar to that which, by its excellence and superior endowments, places Man so much above animals " and even to be willing to group together " soul," " reason " and " instinct " as possible names for this principle.[2]

However, Lyell yet insisted firmly on " the enormous gap which separates Man from the brutes."[3] For all his resemblances to the lower animals, man was yet distinctive and superior; the distinctiveness and superiority of man Lyell saw in three characteristics—his moral faculty, his religious faculty, and his power of " progressive and improvable reason."[4] In attempting to account for these unique qualities, Sir Charles suggested that their appearance could have been accomplished within the scheme of evolution by births similar to " the birth of an individual of transcendent genius . . . such leaps may have successively introduced not only higher and higher forms and grades of intellect, but at a much remoter period may have cleared at one bound the space which separated the highest stage of the unprogressive intelligence of the inferior animals from the first and lowest form of improvable reason manifested by man."[5]

Although this last hypothesis, advanced by Lyell on his own, made Darwin " groan " by seeming to disregard Darwin's treasured principle of natural selection,[6] it yet may be taken to illustrate Lyell's consistent efforts to substantiate the principle he always felt to be underlying even

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[1] *Ibid.*, p. 383.
[2] *Ibid.*, p. 385.
[3] *Ibid.*
[4] *Ibid.*, pp. 385–388.
[5] *Ibid.*, pp. 392–393.
[6] *Life & Letters of Darwin*, II, 197 (letter to Lyell, March 6, 1863).

Darwin's evolution, that, in the words of Professor George Rolleston, " the soul, or the higher intellectual and moral faculties, play the first instead of the second part in a progressive scheme."[1] Thus, although Lyell fully expected that it would become " the generally received opinion of men of science . . . that the past changes of the organic world have been brought about by the subordinate agency of such causes as ' Variation ' and ' Natural Selection,' " he warned against deifying such " secondary causes " or immeasurably exaggerating their influence. " In our attempts to account for the origin of species, we find ourselves . . . brought face to face with the working of a law of development of so high an order as to stand nearly in the same relation as the Deity himself to man's finite understanding, a law capable of adding new and powerful causes, such as the moral and intellectual faculties of the human race, to a system of nature which had gone on for millions of years without the intervention of any analogous cause."[2] Similarly, Sir Charles saw " the whole course of nature " as " the material embodiment of a pre-concerted arrangement " and thought that " the perpetual adaptation of the organic world to new conditions leaves the argument in favour of design, and therefore of a designer, as valid as ever."[3] Having re-established God in a pre-emiment place in the universe, Lyell ended his book by insisting that, " so far from having a materialistic tendency, the supposed introduction into the earth at successive geological periods of life—sensation—instinct—the intelligence of the higher mammalia bordering on reason—and lastly, the improvable reason of Man himself, presents us with a picture of the ever-increasing dominion of mind over matter."[4]

Although Lyell had thus joined God and the moral and intellectual faculties to the theory of evolution in a way Hugh Miller would have found breathtakingly shocking, Charles Darwin himself was disappointed by what he took to be the hesitancy with which Sir Charles accepted

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[1] Quoted by Lyell, *Antiquity of Man*, p. 384.

[2] *Ibid.*, p. 365.

[3] *Ibid.*, p. 393.

[4] *Ibid.*, p. 394.

the evolutionary theory. It is indeed true that Lyell sprinkled his discussions of the hypothesis with a goodly number of strategically-placed qualifying words and phrases. However, one is inclined to attribute this hesitancy to the difficulties preventing the leading geologist of his time from making an abrupt, complete about-face. Too, *The Antiquity of Man* was published only four years after the publication of *The Origin of Species*, and so, after this relatively short interval, Lyell may be forgiven for having presented the new theory with fairness and defended it with skill and for then having treated it as only probably rather than necessarily true. Darwin had himself admitted in 1860 the difficulty of Lyell's situation and had commended him then with high words: "Considering his age, his former views, and position in society, I think his conduct has been heroic on this subject."[1] In 1863, on the publication of Lyell's new book, however, Darwin wrote the geologist expressing great disappointment "that you have not given judgment and spoken fairly out what you think about the derivation of species";[2] much of Lyell's motive may be gathered from his reply: "You ought to be satisfied, as I shall bring hundreds towards you who, if I treated the matter more dogmatically, would have rebelled."[3]

There is, in fact, little doubt that Lyell did bring men, by the hundreds and by the thousands, to accept the theory of evolution, for in Lyell were reconciled, at least temporarily, the alternatives which the nineteenth century had previously confronted with dealing with the question. Robert Chambers had, of course, done invaluable service in preparing the way for eventual public acceptance of a principle of development. However, his insistence while doing so that acceptance of such a theory need not obviate belief in God and in His working in the universe did not gain widespread acceptance. Moreover, because Chambers' work was often based on flimsy scientific evidence, it left the way open for Hugh Miller to refute Chambers with evidence of his own. Miller, of course, also differed from Chambers in that he sincerely believed that

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[1] *Life & Letters of Darwin,* II, 119 (Letter to Dr. Asa Gray, July 22, 1860).

[2] *Ibid.*, II, 196 (March 6, 1863).

[3] *Ibid.*, II, 97 (March 11, 1863).

one could not accept both God and any evolutionary thesis. Belief in a series of special creations was for Miller a necessary prerequisite for a belief in the dignity of man and, indeed, for a belief in God. By thus intertwining religious and scientific belief Miller did good service to neither. It remained for men such as Lyell to show the way forward. Lyell, in his early work, had managed to join Miller in upholding special creation without irretrievably involving his rejection of the developmental thesis with his religious beliefs. It was, therefore, easier for him, late in his career, to accept in large measure the evolutionary ideas of Darwin on scientific grounds and still reaffirm his earlier insistence on the pre-eminence of man's mental and moral qualities. Lyell could thus maintain that through the possession of these qualities man could occupy a position of dignity even in a world of evolution.

With the conversion of Lyell, the scientific opposition of lesser men such as Hugh Miller tended to fade in importance. The humanism of men like Miller, inextricably bound up with the concept of special creation and with a concept of God as ever-active in the natural world, had done much to cloud the issue, with the result that many a skirmish in the battle over evolution dealt with matters later seen to be irrelevant. Lyell, who had opposed the evolutionary theory on scientific grounds, found it easier to shift his allegiance than did those who had opposed that theory on theological grounds, but even he floundered about in trying to account for the soul in man; only later, with the dominance of the doctrine of Separatism, was it seen that the doctine of evolution could be accepted without reference to the sources or even the existence of the soul of man. Similarly, only after years of excited, even terror-stricken discussion of the new scientific thought was it seen that the formation of man, whether accomplished in an instant or in eons, could still have been accomplished by God. With these realizations the way was clear to a reaffirmation of the inherent dignity of man. Man, even as the end product of evolution rather than as a special creation of God, was yet more than a " mere animal." Although man owed his physical characteristics to the lower animals, he yet possessed qualities of mind and spirit which made him unique. Descended from the apes, he could

still be seen as a creature of God.

List of Works Cited

Chambers, Robert. *Vestiges of the Natural History of Creation.* New York, 1857.

Darwin, Charles R. *The Life and Letters of Charles Darwin,* ed. Francis Darwin. 2 vols. New York, 1887.

——. *The Origin of Species by Means of Natural Selection,* in *Great Books of the Western World,* Vol. 49. Chicago, 1952.

Lyell, Sir Charles. *The Geological Evidence of the Antiquity of Man.* London, 1914.

——. *Life, Letters and Journals of Sir Charles Lyell, Bart.,* ed. Mrs. [Katharine Murray Horner] Lyell. 2 vols. London, 1881.

——. *Principles of Geology, Being an Inquiry How Far the Former Changes of the Earth's Surface are Referable to Causes Now in Operation.* 2 vols. Philadelphia, 1937.

——. *Principles of Geology,* or *The Modern Changes of the Earth and Its Inhabitants.* New York, 1853.

Miller, Hugh. *Footprints of the Creator,* or *The Asterolepis of Stromness.* Edinburgh, 1890.

Oken, Lorenz. *Elements of Physiophilosophy,* trans. Alfred Tulk. London, 1847.